



ENERGY

\$1.50

ENERGY = MC^2 ...THE MICHIGAN COMPUTER CONSORTIUM MAGAZINE

ISSN: 0740-2759

MAY 1985



CHECK THESE SPECIALS AT PERRY COMPUTERS.



**WE'RE ONLY
15 MINUTES AWAY.**

We pack Everything You Need
Together—including Software.

\$1396⁰⁰ Regularly \$1657.95

Comes with 2 Disk Drives and
128 K Monochrome Monitor.

**TAKE ONE 15 MINUTE DRIVE
TO PERRY COMPUTERS, AND
WE KNOW YOU'LL BE BACK.**

Customers return time and again to Perry Computers because of the variety in computer component and software selection, the computer instruction and service we provide, and for our shockingly low prices.

Perry Computers is a complete computer retail store. We stock computer systems, hardware, software, and peripherals for these five computer product lines; Sanyo, Epson, Franklin, Columbia and Radio Shack.

Today you want a computer system that is reliable, powerful, and compatible for later expansions. But most importantly, you want all this quality at an affordable price. That's why customers drive 15 minutes to Perry, and keep coming back. The prices are right.

**FOR INFORMATION
Call 517-625-4161**

SPECIAL OF THE MONTH

Perry Computers will offer monthly specials in this computer ad.
Watch for them.

■ FRANKLIN ACE FAMILY PAK	\$450.00
■ MODEL 4 PORTABLE 2 Dr. 64K	\$555.00
■ TANDY 1200 HD 256K	\$1700.00
■ COLUMBIA 2 Dr. 256K	\$1300.00
■ EPSON LX-80 NEW	\$300.00
■ SKC DISKETTES	\$250.00



**PERRY
COMPUTERS**

APRIL 1985
 SU MO TU WE TH FR SA
 1 2 3 4 5 6
 7 8 9 10 11 12 13
 14 15 16 17 18 19 20
 21 22 23 24 25 26 27
 28 29 30

CONSORTIUM CALENDAR

MAY 1985

JUNE 1985
 SU MO TU WE TH FR SA
 1
 2 3 4 5 6 7 8
 9 10 11 12 13 14 15
 16 17 18 19 20 21 22
 23 24 25 26 27 28 29
 30

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 M36 EXEC	2		3 CCUG
5	6	7 HEATH SIG	8 LACC	9	10	11
12 Mother's Day	13 TI USERS GROUP	14 M36 ENERGY DEADLINE	15	16	17 CHAOS APPLE LUG	18
19 Victoria Day (CAN) EPSON USERS	20 CMTUG	21 ACH	22	23	24	25
26 Memorial Day	27 UPCO (IBM PC)	28 OSBORNE SIG	29 CP/M SIG	30	31	

LANSING AREA COMPUTER CLUBS

Apple LUG (Lansing Users Group)

Meets: Third Saturday, 9:30 A.M.
 182 South Kedzie Hall, MSU, East Lansing
 Contact: P.O. Box 27144, Lansing, MI 48909

CCUG (Greater Lansing Color Computer Users Group) (MC2)

Meets: First Saturday, 1:00 P.M.
 East Lansing Public Library, 950 Abbott, E.L.
 Contact: P.O. Box 14114, Lansing, MI 48901
 Terry Feichtenbiner 371-1594

CHAOS (Capitol Hill Atari Owners Society) (MC2)

Meets: Third Saturday 10:00 AM
 Lansing Public Library Auditorium
 401 S. Capitol, Lansing
 Contact: PO Box 16132, Lansing, MI 48901
 Leo Sell (president) 393-7792

Comp Klub of Lansing (TI Users Group)

Meets: 2nd Tuesday, 7:00 pm
 River Front Community Bldg.
 501 N. Cedar St., Lansing
 Contact: John Hayes 882-7860; Eugene Loyd 394-1494

Epson Users Group

Meets: Third Monday, 7:00 pm
 Computer Source West, 422 Elmwood, Lansing
 Contact: Ted Bozarth 332-3710 (after 8 PM)

LACC (Lansing Area Commodore Club)

Meets: Second Thursday, 7:00 PM
 All Saints Episcopal Church, 800 Abbott, E.L.
 Contact: PO Box 1065, East Lansing, MI 48823
 Jae Walker (president) 351-7061

M36 (Mid-Michigan Microcomputer Group) (MC2)

Meets: Third Thursday (usually), 7:30 PM
 East Lansing Public Library, 950 Abbott, E.L.
 Contact: PO Box 1302, East Lansing, MI 48823
 Warren Wolfe (president) 337-7672

Executive Meetings:

First Thursday, 7:30 PM
 Beggar's Banquet, 218 Abbott, East Lansing

M36 CMTUG (Central Mich. TRS-80 Users Group) SIG (MC2)

Meets: Third Tuesday, 7:30 PM
 Foster Community Center, 200 N. Foster, Lansing
 Contact: Lee Hodges 669-3258

M36 CP/M SIG (MC2)

Meets: Last Thursday, 7:30 PM
 Foster Community Center, 200 N. Foster, Lansing
 Contact: Greg Martin 484-5850

M36 Heath/Zenith SIG (MC2)

Meets: 2nd Wednesday, 7:30 pm
 All Saints Episcopal Church, 800 Abbott, E.L.
 Contact: Tom Trana, PO Box 829, East Lansing MI 48823

M36 Osborne SIG (MC2)

Meets: Last Wednesday, 7:30 pm
 East Lansing Public Library, 950 Abbott, E.L.
 Contact: Larry Tirone 484-3921

U.P.C.O. (Users' Personal Computer Organization--IBM PC group)

Meets: 4th Tuesday, 7:30 PM
 Rm. 118, Agricultural Engineering Bldg., NSU
 Contact: Skip Osterhus 321-3425

Clubs designated (MC2) are members of the Michigan Computer Consortium.

This listing is as accurate as the information we receive. To list an event or update information, contact Joe Werner at 337-7415 (evenings), or on the local BBSs BabbleNet or LSJ Access, or via MCI Mail (JWERNER).

ABOUT ENERGY

ENERGY (ISSN 0740-2759) is published monthly by the Michigan Computer Consortium, Inc., P.O. Box 1302, East Lansing, Michigan 48823.

Copyright (C) 1984, Michigan Computer Consortium, Inc.

Individual authors retain all rights to articles appearing in ENERGY. (For items reprinted from other sources, contact the original publication.) Unless otherwise noted, material contained in ENERGY may be reproduced in whole or in part by any other non-profit organization or for other non-commercial purposes. Acknowledgement should be given to "ENERGY, the Michigan Computer Consortium Magazine", and to the author of the material. Please send a copy of the reprint to MC2 at the address above.

Subscriptions to ENERGY are provided as a benefit of membership in one of the clubs constituting the Consortium. Subscriptions are not otherwise sold. For information about joining one of the clubs in the Consortium, write the club at the address above.

ABOUT THE MICHIGAN COMPUTER CONSORTIUM

The Michigan Computer Consortium (MC2) was formed in 1983 to sponsor joint activities involving member computer clubs. Current members of MC2 are:

CCUG Greater Lansing Color Computer Users Group
CHAOS Capitol Hill Atari Owners Society
M3G Mid-Michigan Microcomputer Group
UPCO Users' Personal Computer Owners

Information about each of these clubs is published elsewhere in ENERGY.

EDITORIAL BOARD

Dennis Cullinan	(CMTIG)	372-6590
Terry Feichtenbiner	(CCUG)	371-1594
Mike Aldrich	(CHAOS)	394-2412
Joe Werner	(M3G)	337-7415
Skip Osterhus	(UPCO)	321-3425
Marvin Goldstein	(Treasurer)	332-5471

ADVERTISING

Advertising in ENERGY is an economical way to promote your products or services to a key audience involved in personal computing. Four sizes of ads are available: business card, quarter-page, half-page, and full-page. Advertising space is limited and controlled, so that ads will never get "lost". Camera-ready copy is needed by the 15th of the month preceding publication. Limited graphics artwork is available at an extra charge. For more information, contact the Editor.

ARTICLE SUBMISSIONS

Persons wishing to submit articles are encouraged to do so. Articles may be submitted via CompuNet or in camera-ready form (3.5 inch columns, 16 characters per inch, 8 lines per inch), or on disk. Contact any Editorial Board member. The deadline for articles is the 15th of the month preceding publication.



ENERGY = MC2...THE MICHIGAN COMPUTER CONSORTIUM MAGAZINE

TABLE OF CONTENTS

Clubs data.....	3
Energy Info.....	4
M3G Section.....	5
Heath/Zenith SIG Section.....	8
CHAOS Section.....	13
CCUG Section.....	21

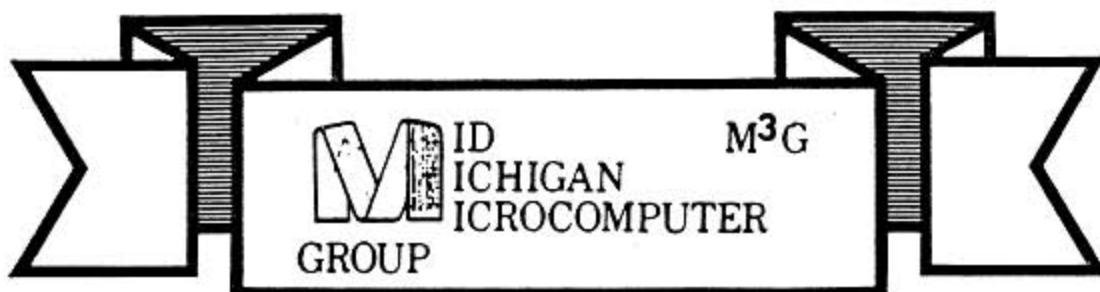


SUPPORT OUR ADVERTISERS

When you support our advertisers, they support you. If you are planning to make a purchase, then call or stop by to see our advertisers first. Let them know that you are there because of their ad in ENERGY. If an advertiser doesn't have the best price in town, then give them the chance to do better, or at least consider what services they offer after purchase.

If a store doesn't advertise here, then let them know you would like to see their ad in ENERGY. Many dealers need to understand how many bonafide users read ENERGY regularly.

M3G



ABOUT M3G

Mid-Michigan Microcomputer Group (M3G) is a non-profit organization of computer hobbyists, enthusiasts, and users in the Lansing and Mid-Michigan area. Formed in 1975, M3G is the oldest personal computer organization in the area, and one of the pioneer organizations in the country. Membership in the club is open to anyone with an interest in personal computing.

MEETINGS

General Membership meetings are held each month, generally on the third Thursday of each month (barring scheduling problems), at 7:30 pm, at the East Lansing Public Library, 800 Abbott Road, East Lansing. Executive Committee meetings are held on the first Thursday of each month at 7:30 pm, at Beggars Banquet restaurant in East Lansing.

DUES

Annual dues for M3G are \$12.00, for 12 consecutive months. Family memberships (two or more people at the same address, receiving only one copy of the Newsletter) are available. The Master member pays full dues; additional family members joining at the same time each pay \$1.00 per year.

To join M3G, come to any meeting, or send one year's dues with your name and address to: M3G, c/o P.O. Box 1302, East Lansing, Michigan 48823.

AFFILIATIONS

M3G is a member of the Midwest Affiliation of Computer Clubs (MACC), and of the Michigan Computer Consortium (MC2).

NEWSLETTER

M3G members receive ENERGY, published by the Michigan Computer Consortium, as a benefit of membership.

SPECIAL INTEREST GROUPS

M3G currently has four active Special Interest Groups: the Central Michigan TRS-80 Users Group (CMTUG) SIG, the CP/M SIG, the Heath/Zenith SIG, and the Osborne SIG. These SIGs hold additional meetings as their members desire, and may charge SIG dues in addition to M3G dues if the SIG so decides. SIG meetings are announced in the Meeting Calendar in ENERGY. Additional SIGs may be formed on any computer-related topic which M3G members may want.

EXECUTIVE COMMITTEE

President.....Warren Wolfe.....337-7672
Vice President.....(Vacant)
Secretary.....Dean Shipman.....355-6181
Treasurer.....Joe Werner.....337-7415

MACC Trustee.....Frank Dolinar.....351-1779
MC2 Delegate.....Joe Werner.....337-7415
CMTUG SIG Chairman.....Lee Hodges.....669-3258
CP/M SIG Chairman.....Greg Martin.....484-5850
Heath/Zenith SIG Chmn...Tom Trana
Osborne SIG Chairman....Larry Tirone.....484-3921

To join M3G, please fill out the following, enclose with your dues, and mail to M3G, c/o P.O. Box 1302, East Lansing, MI 48823, or come to a meeting.

NAME: _____

ADDRESS: _____

CITY, STATE: _____ ZIP: _____

PHONE: _____ (home) _____ (office)

Dues:	() M3G	\$12.00
	() CMTUG SIG	(no additional dues)
	() CP/M SIG	(no additional dues)
	() Heath/Zenith SIG	(no additional dues)
	() Osborne SIG	\$ 2.00

TOTAL: _____

A VIEW FROM THE INSIDE

Warren Wolfe,
Data Basics
President, M3G

The topic for May's M3G meeting is Comdex '85. The speaker is Greg Martin. There will be another speaker if I can twist the appropriate arm at the appropriate time.

Another month has passed. Another set of rumors about the next release from IBM has come and gone. The latest rumors about the impending release of the PC-2 have brought to mind the fact that there is now a corporate power of massive proportions loose in the personal computer field. The garages of the mid-seventies have given way to the boardroom. It's kind of sad in a nostalgic sense; some old codgers have been around for the entire history of personal computing. Unlike most areas of human endeavor, the current level of sophistication of personal computing was attained very quickly. There is a tremendous performance gulf: the Altair and IMSAI machines on one side, and the IBM PC-A7 and Unix machines on the other. This gulf, however far across it may be in terms of accomplishment, is a mere ten years in breadth.

The products sold in the personal computing industry have changed drastically in the last ten years. In the place of bags of electronics parts that could produce a computer if correctly assembled, we have menu systems arranged such that a user never glimpses the machine running under their spreadsheet package. It could be argued that the computer hobbyists are still there, and in the same numbers; differences in the "computer population" figures are caused by the crowds of PC "users" that show up as hobbyists. The point is well taken, but the feel of personal computing is different today. The corporate user spends more money than the hobbyist; PC magazines have displayed monetary tropism, pursuing the readership with the most money. There are few publications for today's hobbyist, while slick magazines with Madison Avenue write-ups of the latest executive-friendly package for tracking stock prices choke the racks at every supermarket.

The primary vehicle of the shift in emphasis has been IBM's entry into a chaotic marketplace, and their rout of all but the most competent of competitors. IBM brought business into the world of personal computing. Hesitant, and uncomfortable with the whiz kids in charge of computer firms, the big money at the disposal of the business world remained out of the reach of personal computing. IBM provided corporate America with a familiar, stable refuge from the anarchistic hackers. Businessmen were aware of the consummate marketing skill of IBM, and knew that they were too big to be destroyed by even a total disaster in the personal computing arena. The people who write software, and the people who make the add-on geegaws that are a staple of the market knew the score, too. They felt secure in tying a project to the IBM PC. Their caution was far from paranoid; many companies with great plans and fine products had dried up and blown away. (Do you remember Sphere, and Processor Technology?) The IBM PC would be around at the conclusion of a ten-month development cycle. It was a decent product, and it was safe. The industry is vastly different. Is it better?

IBM produced a product that was not necessarily state-of-the-art, but as good as you could get with electronic parts that were deliverable in large quantities. There was a choice between the 8088, the 8086, and the 68000 as the processor; IBM chose the 8088. The Intel family was the choice for upward near-compatibility with the 8080 and CP/M software (IBM offers a version of CP/M-86 to this day), and the 8088 allowed IBM to use the vast number of 8-bit support chips in the PC, instead of the more expensive 16-bit support chips necessary for the 8086. The PC used 16K memory chips because the 64K chips were scarce and expensive at that time.

The trust that people placed in IBM's staying power made the PC the industry shaker that it is. IBM's marketing power made it the immensely profitable industry leader. The money that IBM made on the original PC allowed them to produce the XT with confidence that it would meet a warm reception. Further profits allowed IBM to develop products that met less general market needs, while bringing the PCs "back into the fold" of mainframes, which still produce the vast majority of IBM's profits. Examples of these products are the 3270 PC and the PC/370. More recent efforts at integration have centered on the Series/1 minicomputer used as a terminal (or PC) concentrator, or file server, and on the vast market of PC software.

The software end of the business is the next area to feel the bite of IBM, in my opinion. In a few years, there is likely to be more money spent on software than on computer hardware. It is unlikely that IBM will let this market slip away from them completely. Their current marketing strategy is to supply retail stores with software at no initial expense. The retailer has to pay for the software after it is sold... often months after it is sold. This is very attractive to the cash-strapped retailer. Most software vendors require large-quantity purchase agreements with large initial purchases. Additionally, the price of software tends to drop with time, making the thousand copies of "Wonder Calc-Man" that the retailer purchased very difficult to sell. Most of the software vendors will have to come up with a plan to combat the "big blue meanies" in the marketing area; they must fight IBM on their own turf. This is, no doubt, a very scary proposition to the MicroPros, Ashton-Tates, and Microsofts of the world. IBM is the most profitable company in the world, and they did not get the title by being incompetent.

IBM's dominance of the personal computer field has had some good effects, and some negative effects as well. The major negative has been the difficulties involved in starting a new direction for personal computing. Most of the computer companies that have started recently have produced IBM PC clones of various levels of suitability. There has been precious little development of new technologies, with the exception of the Apple Macintosh, and a few 68000-based Unix machines. This is offset, to my mind by the fact that it is now possible to expand a PC with a large variety of hardware and software that will run properly without modification. This may not mean much to those who are new to the field, but that is a great relief to anybody who has tried to put various boards in old computer systems.

THE USER
by Joe Werner

The Right Computer

A recent article by Dan Poorman in the Lansing State Journal about orphan computers caused me to do quite a bit of thinking. You see, the computer I'm using to write this on, an IMSAI 8080, was eight years old last November, and was made by a company that's been in and out of business a couple of times since then. (The founder of IMSAI also founded ComputerLand a few years later. Guess where all his energies went.)

I've been pleased with my purchase, even though I've probably spent several times as much on my machine as I would have on a new, more capable, IBM PC. (Not to mention a Commodore, Atari, or other capable low-price computer.) The machine is expandable, and has been able to grow as my needs (and funds) have grown. Besides, the other systems simply weren't available way back when, when I bought my system.

For people who are considering a computer purchase -- any computer purchase -- there are two essential questions you must ask: (1) What do I want a computer for? and (2) Will this machine do what I want it to do?

To the first question, you may answer "to learn about computers", "to have the latest techno-toy", "to use word processing to write a dissertation", "to keep track of a 12,000 part inventory", or any of uncountable other reasons. Multiple reasons are also acceptable. But the purposes you want a computer for will dictate what type of computer is acceptable for you.

For example, if you want to use word processing to write a dissertation, you will need a letter quality printer meeting the requirements of whatever school the dissertation is for. If you wanted to use the same word processor to prepare a small neighborhood-association newsletter, you could conceivably get by with a less-expensive dot-matrix printer.

The second question, then, can only be answered after the first. When you look at a system, the question which you must ask is, "Will this system meet my needs?" If the answer is yes, the system is a worthwhile buy, even if the system is an orphan. If the answer is no, keep looking. (If I've got to move 40,000 pounds of freight a trip, I'm not going to buy a bicycle because it's cheaper. I'm not even going to buy a half-ton pickup truck, unless I'm willing to put up with the inconvenience of hauling the freight in 40 trips.)

The answer to the second question could be "no, but..." or "yes, but...". This might indicate a

system without growth potential, or a system which comes close but misses slightly. In such cases, you have to examine your alternatives. The system might be adequate for some things but not others. If this is true, you need to consider priorities and time schedules, and ask yourself if the system is worth it for what it will do. You may well decide that it is, and that you'll either forgo some needs, expand this computer later, or buy another system when the time comes.

You may also find other ways to address limitations. For example, the person wanting to write a dissertation might well buy the less-expensive dot-matrix printer, using it for rough drafts, and arrange to borrow or rent a letter-quality printer for the final drafts.

The tragedy is not when a person buys an orphan computer, but when one buys a computer that won't meet needs. Having an orphan computer can compound this tragedy, since the orphan is less likely to be expandable, but that's not necessarily the fault of the orphan.

Only after you answer honestly the two questions posed above are you able to answer the third question: "Is this computer worth the price?" Which is very closely related to "Is this the right computer for me?"

ACM Meeting to feature UNIX

The Mid-Michigan Chapter of ACM (the Association for Computing Machinery) will hold its May meeting on Wednesday, May 22, at 7:30 pm, at the Quality Inn on Grand River Avenue near Frandor. A representative from AT&T will discuss UNIX.

The ACM is a national society of computer professionals. Founded in 1947, ACM is one of the oldest professional societies in the computer industry. The Mid-Michigan Chapter has recently re-activated. Guests are welcome at meetings, and chapter memberships are available.

For more information, contact Walter Davis at Computer Applications and Software Systems of LCC at (517) 483-1546 (days) or 487-4996, or Lew Crippen at EDS at (517) 377-6636.

- Joe Werner

H/Z SIG NEWS

by Thomas Trana

Last month's column was written about 4 days after I "took office" so it was a little rushed. I would belatedly like to thank the outgoing SIG chairman, Bill Goodwin, for all that he has done for the SIG so far. Bill was among the first computerists in the Lansing area to get a 2-100, and was one of the primary forces behind the organizing of the H/Z SIG. He has served as chairman since the group got under way, arranging programs and writing the columns for *Energy*. Current members of the group owe Bill much for the time and effort he has expended on our behalf.

Sometimes it seems the most constant thing about the computer industry is the constant change. It wasn't too many months ago I bought 64K (150 ns) RAM chips for \$5 each and thought it was a bargain, and last month I mentioned 256K chips were now down to \$10. Well, Microprocessors Unlimited is now (Apr. Byte) advertising 64K chips for \$2 and the 256K's for \$7+. However, a member at the Apr. meeting said that those prices are already obsolete (presumably because of the 2-4 month lag time of Byte ads), and they are currently selling 256K chips for about \$5.50. The Rampal upgrade kit from First Capitol Computer, which allows the use of 256K chips on recent 2-100 mother boards, is listed at \$80, so expansion to 3/4 megabyte of RAM memory can be done for as low as \$250. Even after following the microcomputer industry for three years, I find that mind-boggling.

There has been a steady decline in the prices of printers over the past couple of years, maybe now x-y plotters will start the same trend. So far, even most simple, one-pen plotters have been in the \$500-\$800 range. Now suddenly, Enter Computer Corp. has licensed Heath to offer a kit version of their popular "Sweet P" plotter. It sells for \$350. I got a little excited when I saw that in the last Heath catalog, especially considering a 10% HUG discount. Then I saw the California Digital ad in the April Byte and got more excited. I found out that Enter is also OEMing a version to Comrex, and C. D. was selling it for \$219. For those not too familiar with plotters (I have to admit to little first hand experience), Forrest Mims III, who writes for *Computers and Electronics*, is a plotter fan and has a column on some applications of plotters in the Mar. 1985 issue. He also had articles on plotters in the Mar. 1984 issue. I hope this leads to lower prices from some other plotter manufacturers. It seems to me that for many types of graphics and mapping functions, a plotter is more appropriate than trying to use a dot-matrix printer in graphics mode. I am very tempted to get one of the Comrex or Heath machines and try it out.

The April meeting was slightly chaotic. There was no formal presentation, but, after exchanging news, rumors, and gossip, several programs were demonstrated, including the "interlace" mode in WatchWord and some general features of WM for those who hadn't seen it before (WM is a word processor written only for the 2-100 and has a lot of nifty features--in spite of a few limitations, it is a real good value for its \$100 price). Jim Tunier showed off O.S.S. Fast Attack from Interdiscipline Corp., which is a complex, but supposedly realistic, simulation of a nuclear submarine. The graphics seemed at least as good as those in Vega-Bound (from the same company), and Jim says this game/simulation is more interesting on a long-term basis than Vega-Bound, as there is more variation between sessions. Steve Mann showed a few things he downloaded from various bulletin boards, as well as pointing out price cuts on some software in the newest, hot-off-the-presses Heathkit Catalog (e.g., MPM-86 for \$100, down from \$650, etc.).

There were more 2-150 users present than usual, and some time was spent discussing what the SIG has to offer them. Because the 2-150/160's are almost fully compatible with IBM software and peripherals, many 150/160 owners probably find more in common with IBM user groups. However, the SIG welcomes users of any Heath/Zenith Computers, and it will only take more users of other models to come to meetings to cause us to increase our relevance to them. Suggestions are welcomed!

Because our meetings are usually before the 15th of the month, which is the deadline for submission of articles to *Energy*, this column is usually written just after a meeting. This means our reports may be more timely than those of groups that meet later in the month. However, it also means that any notices for the next meeting, such as the upcoming program, must be announced now. At this point, I haven't gotten a schedule set up, so that until I get programs planned two to three months ahead, I will be scrambling from month to month. Which is a long-winded way of saying I again don't yet know what the program for next month's meeting will be. Anybody who has new software or hardware, please consider bringing it and doing a brief demonstration. We will have a machine available again; there was no actual exchange of programs last time, so if you have something which is exchangeable, please bring it. I can often be reached at 355-4580, afternoons and evenings, if you want to get in touch with me.

NEW CLUB IN TOWN--

WITH A TWIST--

SLIPPED DISK COMPUTER CLUB IS HERE!

April 10, 1985. No joke, folks, there is a new computer group in town, one which might be called a commercial users group. *Slipped Disk Computer Club* is a franchise operation which recently opened a branch in East Lansing (with other franchises in Madison Heights and Clarkston). I happened to drive by just after they opened. Admit it--could you resist checking out a place with a large sign in the window: **SLIPPED DISK COMPUTER CLUB?** I couldn't either. I talked briefly with two young women who were staffing the place at the time, and got some information. *Slipped Disk* offers Commodore 64 and Apple computer users another alternative. Several machines are available for use and a library of public domain programs is accessible by members (I was told over 2000 programs are available). Some commercial software is also on hand for review and use. Except to offer disks for copying, the franchise does not handle retail sales. Members may bring their own disks if they wish. If I understood correctly, the membership fee is \$50/year, and the machines rent for \$3-\$5 per hour (depending on time of day). Any copying of library programs must be done on the premises, and an hour is the minimum time for rental of a machine. You do not have to own a machine to belong--in fact, this could be a good way for someone uncertain about the whole computer thing to get some hands-on experience. They also plan to hold occasional classes. Located at 1331 E. Grand River (part of the former Inacom Computer Store in Brookfield Plaza), *Slipped Disk* plans on being open 12 hours per day. Call 332-6607 for more information, or stop in and check them out!

--Tom Trana



MORROW MEMOS

In the Bullseye with Target Plannercalc
By Cheryl L. Tirone

The other day my husband was in to see Bill Kelly at K&K Accounting/The Computer Store about our income taxes. At the time Larry explained to him that I was starting up a column reviewing software for Energy. Bill asked if I could possibly do something with a little piece of software that he had acquired in bulk quantity but knew little about. Larry said, 'Sure!', so here I am.

The program is Target Plannercalc, written by Comshare Target Software, and is being sold by for about \$3.00 (that's right, just \$3.00 snackers) a copy. It comes with a users manual & software diskettes in a variety of formats, in double or single density. Hnnnnnnnn?

Well, I have Uniform (tm), so the first thing I did was transfer the software into my Morrow MD2 format out of the Xerox single density format I received it in. (By the way, Bill Kelly is an authorized Morrow dealer). Not so tough. Now read the manual, install the software and start playing.

First of all, and typical, the manual is not always helpful. To install the program you should have some basic knowledge of how your computer/terminal handles screen attributes. Second, the manual assumes that you know how to install software. When you run install a menu appears listing possible system configurations. I recommend you select something from this first menu even if you have to pick the next best thing. Following the prompts you then are given a choice to quit, manually input or change you installation. After making a selection that was specifically my terminal, I quit. Wrong!!! It is advisable that you check the settings by going into manual installation as it doesn't complete all the settings.

Once properly installed (four times for me) you are then tutored through a sample worksheet. The first command it covers is pulling up a directory of the models on disk. Then you recall the sample model and start learning to move around within the worksheet. Having mastered that it has you print the sample model. Not bad for starters.

Now then you've mastered installation, cursor movement, directories, recalls and printing and we're up to Chapter four 'Model Creating', slow but sure. The text

takes you through the creation of a small model step by step with sufficient explanation of each step. This takes only a few minutes and its pretty simple. Plannercalc has an interesting approach to spreadsheets, my only experience being Supercalc and Lotus, in that it uses row and column logic entered as a program rather than specific cell entries.

At this point the manual assures you that you have a working knowledge of the program and begins to expand on what Plannercalc can do. In the next three chapters it covers the more advanced capabilities of model building. The users guide sprinkles in examples all through the text nicely illustrating each new concept covered. Although a basic understand can be attained just from reading it is helpful to do the examples at the keyboard.

Chapter eight covers editing of previously entered and/or saved models. It again uses nicely augmented examples and covers each edit function. Chapter nine delved into printing models and the command programs in more detail than previously covered. The final chapter covers the online help and error messages.

Several reference charts appendices are included along with an index at the back of the manual. Some of this information is helpful as a quick reference once you become familiar with Plannercalc. There also is an appendix which covers in a little more detail the installation of Plannercalc. Another nice feature used in the manual is that at the beginning of each chapter a little paragraph prefaces each chapter outlining what the chapter will cover. Each chapter also has a nice summary of the points covered and a list of key words that will be presented. Then at the end of each chapter is a brief review of the key points presented in the text.

Quite honestly I don't expect this software to make a major impact in the computer market, but for those within the reach of my writing this is definately a steal at \$3.00. Please feel free to call upon me if you are interested and I'll be glad to offer assistance to get help you get it up and running. I'll be around on bulletin boards and the OSIG and M3G meetings if you wish to get in touch. Keep on Target...

>>>> CLASSIFIED ADS <<<<

For sale: Teletype 16
60 baud Baudot teleprinter
60ma current loop interface
excellent condition

Asking \$25.00. Call Tim Childs at 321-4072.

with notes

By Skip Osterhus

Congratulations UFGD members on receiving your monthly news letter. ENERGY is a club benefit that will replace our old monthly meeting notice. You will receive this publication until you membership expires at no increase in membership dues and none anticipated, due to the fact that the membership has been very supportive of the disk-of-the-month sales. I would like to thank Dick Janson and Les Mack for making this possible. I would also like to apologize to each member for the April meeting notice arriving after the April meeting. I believe this was the first time it ever happened but as scheduled for the past 3 years the meeting was on the 4th Tuesday of the month. I urge everyone to remember when the club meetings are and not rely on the delivery of this publication to tell you when.

The April meeting went as follows:

Time: 7:30 p.m. on April 23rd
Place: Room 118 Ag Eng/MSU campus
Attendance: 15

- (1) Software demo of the disk-of-the-month
Software demo of the freebie 3-by-5
(by Linda Johnson)
- (2) Software demo of Notebook
Software demo of PFP II
(by Michael White)
- (3) 2nd doorprize - PC Magazine
- Won by Dan Evan
1st doorprize - Easy DOS II
- Won by Dick Janson

If you haven't attended a meeting for awhile let me tell you what is now available at the meetings.

- (1) Copies of ENERGY.
- (2) Blank diskettes (black in color) at \$1.50 each.
- (3) Blank diskettes (several colors) at \$2.50 each.
- (4) Disk-of-the-month at \$5.00 each.
- (5) The following 'FREE' for copying diskettes

Description

Mar/84 IBM Exchange
Apr/84 IBM Exchange
May/84 IBM Exchange
Jun/84 IBM Exchange
Jul/84 IBM Exchange
Aug/84 IBM Exchange - 2 diskettes
Sep/84 IBM Exchange
Oct/84 IBM Exchange - 2 diskettes
Nov/84 IBM Exchange
Dec/84 IBM Exchange - 2 diskettes
Jan/85 IBM Exchange
Feb/85 IBM Exchange
Mar/85 IBM Exchange
Quick Look - IBM Grazing Assistant
Quick Look - IBM Writing Assistant
Quick Look - IBM Filing/reporting Assistant

3X5 - 3 by 5 card index replacement
King's Quest help by Pierre
Farsi-Console by Hervy Micro Consulting
CXX Demo by Quantun

(These are only some of the free diskettes available.)

The May meeting agenda is as follows:

When: 7:30 p.m. (sharp) on May 28th
Where: Room 118 Agricultural Engineering building
SE corner of Shaw and Farm Lane
MSU campus

What/Who:

- 7:30-7:45 Club announcements
(by Skip Osterhus)
- 7:45-9:00 Hardware/software demo of telecommunications
(1) Daw Jones
(2) CompuServe
(3) IBM EES in Boca Raton
(4) Misc BBS boards
(by Skip Osterhus)

9:00-9:15 Break - time to sign up/chat/etc.

9:15-9:20 Doorprize awarded
(Any paid member in attendance is eligible)

9:20-9:30 Open question and answer time
(1) Ask questions
(2) Answer questions
(3) Make announcements



CHEAP COMPUTERS by Tim D. Childs

Attention hardware hackers! Several ONTEL terminals are available on the local surplus market at a very reasonable price. These would make excellent foundations for a microcomputer, or could be made into useable terminals. The ONTEL features a 14 inch Motorola monitor, Keyboard with 13 function keys (4 are illuminated), a cursor keypad and numeric keypad, a heavy duty power supply (+5v 2.14A, several other voltages), and a card cage full of electronics. The case is 23" wide, 25" deep and 18" high. To the right of the screen is a removable cover which provides access to the electronics. The opening measures 9 3/4 by 5 1/2.

What can you do with one? Well, as is, not much. They contain an 8008 (yes, I mean an 8008) which expects to have its software down line loaded from some remote source and are designed to interface via Burroughs TDI (Two wire Direct Interface). The first thing I'd do is remove the card cage and drop it in the nearest trash can. [Bill Serviss or Lee Hodges might be interested in the 8008 CPU. -- JWW] This leaves plenty of room to install disk drives and a SBC of some type. The monitor requires horizontal and vertical sync and video, all TTL levels. I believe that ONTEL runs the monitor at a horizontal rate in the 18 khz region, but that can be adjusted down to the TV rate of 15750 if need be. The keyboard is an 8 bit parallel device with strobe. A separate RESET line is activated by depressing CTRL-SHIFT-PROG. This makes for a handy "front panel" system reset that is reasonably immune to accidents. Every key generates a unique 8 bit code, and some can have four different ones, depending on CTRL and SHIFT. The keyboard is detachable, but it is tethered by a rather large and usually short cable.

I am asking \$20 each for the ONTELS in as is condition. All have white phosphor CRTs which are well used, but should be useable. I have the following documentation available: Keyboard schematic and scan codes, Monitor schematic that is close but not exact, and power supply schematic that will help in tracing out what you actually have. Keyboards are intact with all keycaps. Replacement key switches are available. If you are interested, I can be reached at 321-4072 weekday evenings between 6 and 10pm and most weekends.

OSIG NOTES

Well another Month flies by and it becomes time to write another OSIG column. However with the advent of summer coming on I find it more difficult to meet my obligations to the club. But here goes anyways. With the over all success of the group diskette purchase. I felt a note of thanks was in order. Thanks too all who participated. Cheryl and I have purchased the communication system and hope to have a OSIG Remote CP/M up sometime in the near future. All goes well with me. I'm now employed, but find it hard to find time to play at home. However, the Model 100, the new addition to our computer family, makes things easier. As a matter of fact, this article is being written while on the road to Eaton Rapids. If you missed the March meeting, you missed the Demo of the Model 100 to Osborne interface. The Osborne, running Axcall, and the Model 100 running it's memory resident program called TELCOM. They were connected thru the Modem and required little, to no experience at all. After all, I was the one you did the demo. Also at the meeting was Stephen Murray. Now for those you don't know him, Stephen is the SYSOP of the CP/M section on the Lansing State Journal Access BBS. Stephen brought his KAYPRO with him and we were able to talk to him about his machine. Also we talked him into doing a demo of LSJA at a later date for our group. I've also been in touch with Transaction Storage, although nothing has been set up yet, I'm very hopeful that they will come up from Southfield to demo their communication system.

By now the OSIG Library List should be squeezed, so if you haven't gotten a copy in a while, now would be a good time. A new HELP is being used that allows squeezed files to be displayed. More about this at the next meeting. The next meeting date is April 24, and the subsequent one is setup for May 28. Now I know how the nice weather makes it hard to make the meetings. But please try to get to them if you can. After all we are what you make us. As always, I can be reached at 484-3921 after 5:30pm and before 10:00pm.

Larry Tirone
168 Susan Drive
Lansing, Michigan 48906



PRO VIDEO

R
O
V
I
D
E
O

Computers and Peripherals
Accessories
Software

DON'T MISS --

MERIDIAN MALL'S BIG 12-HOUR SALE
MAY 17, 1985, 10:00 a.m. - 10:00 p.m.

It's also our 2nd Anniversary!

And to celebrate and say "Thank You" to all the great people we've met, we will have a "special" Special during the 12-Hour Sale. This will be in addition to our selected group of sale items.

Come by and see us!

Your friends at Pro Video --

Dottie

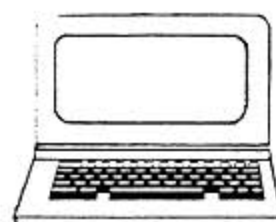
Letta

Fred

Lin

Debbie

Sue



PRO VIDEO
MERIDIAN MALL
(NEXT TO MERIDIAN WEST THEATERS)
OKEMOS, MICHIGAN 48864
(517) 349-7353

SPECIAL SALE

QUANTITY	DESCRIPTION	REGULAR	SPECIAL
2500/CTN	PAPER 9 1/2 x 11 WHITE 20# CONTINUOUS(#10657)	\$ 34.70	\$ 30.70
2500/CTN	PAPER 9 1/2 x 11 WHITE 20# MICROPERF(#10652)	\$ 37.90	\$ 33.70
1250/CTN	PAPER 9 1/2 x 11 WHITE 20# MICROPERF(#10633)	\$ 19.00	\$ 17.00
1 EACH	KEYBOARD COVER RIGID PLASTIC 4 1/2 x 17 FOR IBM - SANYO - RADIO SHACK(#KC210)	\$ 10.00	\$ 9.00
50/PK	DISKS SINGLE SIDED/DOUBLE DENSITY(#10285B)	\$ 86.00	\$ 80.00
50/PK	DISKS DOUBLE SIDED/DOUBLE DENSITY(#10263B)	\$106.00	\$ 97.00

MAIL ORDERS ONLY

J & M SOFTWARE
DEPT. A
400 SAWYER ROAD
LANSING, MI 48910

MICHIGAN RESIDENTS 4% SALES TAX
SHIPPING 1% (MIN \$1.00)
PREPAID ORDERS ONLY
SPECIAL PRICES GOOD THRU 6/30/85

WRITE FOR COMPLETE CATALOG

CHAOS



C.H.A.O.S. WELCOMES YOU
TO THE WORLD OF THE

ATARI



CHAOS is not affiliated with Atari

CAPITOL HILL ATARI OWNERS' SOCIETY

C.H.A.O.S. IS:

C.H.A.O.S. is the Capitol Hill Atari Owners Society. CHAOS meets every third Saturday in the Foster Community Center (200 N. Foster). The meetings run from 9am-12 noon. The presentations at meetings include new hardware and software and news. Business is limited at general meetings to make the meetings more enjoyable.

C.H.A.O.S. MEETINGS ARE:

FUN, EXCITING, INFORMATIVE, AND CHAOTIC

You will have to see a CHAOS meeting to believe it. The discussions are lively, with lots of news and information. The presentations are of general interest. The speakers arrange their presentations to be understood by the beginners in the group as well as the experts.

The presentations at any meeting may include wordprocessors, games, databases, educational applications, utilities, hardware, and hardware modifications and enhancements.

There are experts and beginners in CHAOS and there are Special Interest Groups periodically when interests arise.

C.H.A.O.S. IS YOUR BEST COMPUTER PERIPHERAL

In addition to receiving a monthly newsletter that will keep you informed of local, national, and international events in computers, you will have access to the largest Atari public domain library of programs in the world.

C.H.A.O.S. HAS OVER 600 PROGRAMS IN ITS LIBRARY.

The CHAOS library is growing every day. This can save you a great deal of time and money. Programs that you write can be added to the CHAOS library. If you would like a listing of the programs in our current library, please send a large self-addressed, stamped envelope. Include an extra 50 cents if you are not a CHAOS member to cover printing costs. Mail your request to CHAOS, PO Box 16132, Lansing, Mich 48901.

C.H.A.O.S. RUNS A BULLETIN BOARD SYSTEM

CHAOS runs a Bulletin Board System that you can dial into if you own a modem. The telephone number for the BBS is 517-627-4243. CHAOS's BBS is one of the most sophisticated systems in existence. It provides a means of leaving messages for other computer owners and a means of obtaining FREE software. Join CHAOS now and get your password right away.

CHAOS's Officers and Leaders

Position	Name	Phone#
President:	Leo Sell	393-7792
Vice president:	Lance Ward	393-1357
Treasurer:	Rob Peck	887-0327
Newsletter Editor:	Mike Aldrich	394-2412
Program Librarian:	Guy Hurt	484-7675
Pub. Librarian:	Richard Evans	351-2381
Rec. Secretary:	Sandy Theisen	882-0124
Cor. Secretary:	Dick Peterson	485-7727
Program Coord:	Gary Ferris	393-2593
Membership Coord:	Bill Mundt	288-6590
BBS Sysop:	Barry Schroeder	627-6708
BBS Sysop:	Mike Clewley	627-7807
BBS Librarian	John Naqy	487-5646

C.H.A.O.S. NEWSLETTER EXCHANGE

If your Atari users group would like to exchange newsletters with CHAOS **PLEASE** send your newsletter to the following address:

C.H.A.O.S.

ATTENTION: NEWSLETTER EXCHANGE

P.O. BOX 16132

LANSING, MICHIGAN 48901

Please update you current list of CHAOS addresses, officers, and BBS number with the previous information.

C.H.A.O.S. PUBLICATIONS LIBRARY

CHAOS has many books and other publications about the Atari computers that can be checked out by members. Each month CHAOS receives newsletters from other Atari clubs from around the world.

HOW TO JOIN C.H.A.O.S.

If you would like to join CHAOS then fill out a membership form or send your Name, address and any other information about yourself you would like and \$12.00 (Yearly membership fee) to:

CHAOS

ATTN: MEMBERSHIP

P.O. BOX 16132

LANSING, MICHIGAN 48901

CHAOS

PRESIDENT'S CORNER

by Leo Sell

Last month several people kinda sorta volunteered for the open positions. I was disappointed that there was not better response to the need for volunteers. Please, get involved. Help your club. I am also looking for some people to help on a committee to prepare for next fall's Computer Faire. If you believe the Atari is the best thing going, help out. Commodore will be there in a big way. We will have our hands full in trying to make the big showing we have in years past.

I recently downloaded a file from Compuserve. An article by Neil Harris, publisher of the Atari Explorer, dealing with the 138XE and the new DOS 2.5. I really didn't expect to get too excited about these two products...until I read this review. It should appear in the next Atari Explorer but let me give you the highlights of what turned me on to the 138XE and DOS 2.5. I can't say I'm excited by the 138XE in and of itself. The extra 64K of RAM would not be that accessible to me without brushing up my programming skills. The same with the Enhanced Cartridge Interface which replaces the old parallel expansion port. Until I see some piece of hardware that I just have to have, which utilizes the ECI, I'm just not that interested. But, put the 2 products together and I am excited!! DOS 2.5 retains compatibility with 2.0 while providing dual density of 1010 sectors free. It is designed by Bill Wilkinson, father of 2.0 and of DOS XL. With a 1850 drive you can read disks of either format. With an 810 or with 2.0, you will read them but you won't see the extra sectors on the disk. Now for the best part. DOS 2.5 contains a program called RANDISK.SYS. When this file is present on a 2.5 disk that is booted, it will automatically check to see if the computer is a 138XE. If so a message will appear informing you that a RANDISK is being set up. Within a few seconds you are back to normal operation but...DOS 2.5 has formatted the extra 64K of RAM as if it were a disk drive of 499 sectors. You can save and copy to D8: and move your data quick as a wink (literally.) You can save everything to the RANDISK and copy it all to your real drive at the end of the session. An example was given of downloading files from Compuserve. This is an operation that is fairly disk intensive so it is a good test of what a RANDISK can do for you. Using a 1200 baud modem, it took Neil 34 minutes to download the selected files direct to a disk drive. Using the RANDISK he took 19 minutes plus 2 minutes (after the session) to save the files to the drive. The savings in connect time charges were over 40% and the overall time savings of 13 out of 34 minutes is significant as well. He went on to display the various files in a slide show type program. He says a new picture was loaded in as little as 3 seconds from the RANDISK including the time to de-compress the pictures. I didn't think I'd be interested in this machine but... (by the way, don't tell my wife I want some more equipment. Ok? Shhhhh.)

** DON'T FORGET **

Beginning in April we have a new meeting place for 5 months. Our spring/summer meeting hours will be 10:00 am to 2:00 pm at the following locations:

May 18, Lansing Library-Auditorium

June 15, Lansing Library-Auditorium

July 28, Lansing Library-Gallery

August 17, Lansing Library-Gallery

See y'all there.

** DON'T FORGET **

MUSINGS...

by Leo Sell

First of all I would like to thank the following people. At the April meeting Gary Ferris volunteered to take over as Program Coordinator. Also, Bill Mundt volunteered to take over the Membership Coordinator duties. Thank you very much gentlemen!! I hope that in the future, however, volunteers will not be so scarce.

This brings to mind the hard work of our former Program Coordinator Diane Genshaw. Thank you for your great efforts.

Worrisome news from Atariland. Sorry they won't be at CES. Is this the beginning of bad times (or at least the end of optimism?) We'll soon see.

Announcement!!! The ANALOG disk is now available. Order it from Guy for only \$6 and CHAOS provides the disk. Each disk will be available for a limited time only.

Speculation is strong that the 65XE and the low end ST's are dead. Looks like, if Atari markets a 16 bit computer it will be the 520ST only. No problem. Also, the 138XE's are trickling into user hands around the country.

May all of your computing be successful.

CASTLE COMMUNICATIONS

BARRY GRIFFIN
Owner/Manager

Office: 371-4321 • Home: 882-2087
"C" Weekdays • 10-6 Saturdays

1716 E. Michigan Avenue • Lansing, Michigan 48912
Business and Personal Computers Sales and Service

CHAOS

SPY HUNTER

Review and hints by Rob Dress

SPY HUNTER, by Bally/Midway, is one of the greatest arcade games, and now it's a great computer game. Your mission is to destroy enemy spies. The situation is life or death. The spies are everywhere. They are in the water, the air, and on the road. But don't worry, you've got the most powerful machine on Earth. It has machine guns, guided missiles, oil slicks, and smoke screens. It also has the power to change into a speedboat and back into a car. Your enemies are:

1) Switchblade - This car is the meanest of the road spies. He either comes from the top or bottom of the road and cuts your car's tires and makes you crash.

2) The Bulletproof Bully - This car is the toughest spy on the road. He tries to run your car off the road. The only way to destroy him is to bump him off the road, because you can't shoot him with your machine guns.

3) The Mobster - I don't know this one's real name, but he is easy to get away from. He rides up and stays in line with your car and takes shots at your tires. If he hits you, you will slide off the road.

4) The Mad Bomber - This is the spy that drives me crazy. He is a helicopter who tries to destroy your car by dropping grenades from the air. Your missiles will take care of him. He can get you in the water or on the road.

5) Dr. Torpedo - This guy is the most dangerous spy of the water. He attacks from the top and the bottom by firing torpedos at your boat.

6) The Mine Boat - I don't know the real name of this spy, but he drops mines in front of your boat and tries to bump you off the river.

Here are some helpful hints on how to survive on Spy Hunter:

1) If the helicopter is trying to bomb you, pull over to the side of the road or water. Let the helicopter run out of grenades and go away. Sometimes, if you're not all the way on the edge of the water or road, Switchblade will come from the bottom and kill you. Also, on expert level, the helicopter has a large supply of grenades and it takes a while for him to run out.

2) In the water, as soon as you go in, follow the edge of the right side and you don't have to worry about running into pieces of land. Hold your machine guns on and go full speed, so nothing has a chance to destroy your boat from the top and nothing will come from the bottom.

3) When you die on the road and the van drops off a new car for you, if you're on a section that you don't like, like the icy road, you can ride on the side until you get out of it. As soon as you start, pull your car all the way to the right; you can drive there without getting killed. To get back on, just move to the road and your points will start increasing again.

ATARI PHONE NUMBERS

TECHNICAL QUESTIONS
(408) 745-4851

REPAIR SERVICE
(408) 745-2824

CUSTOMER RELATIONS
(408) 745-5759

TRY THIS ONE!

```
10 REM EXPLOSION
20 REM DUR=LENGTH OF EFFECT,1-10
30 DUR=6
40 PITCH=20:GOSUB 80
50 SOUND 1,0,0,0:SOUND 2,0,0,0
60 GOTO 30
70 REM *** SUBROUTINE ***
80 SOUND 2,75,8,15
90 ICR=0.79*DUR/100
100 V1=15:V2=15:V3=15:REM VOLUME
110 SOUND 0,PITCH,8,V1
120 SOUND 2,PITCH+20,8,V2
130 SOUND 2,PITCH+50,8,V3
140 V1=V1*ICR
150 V2=V2*(ICR+0.05)
160 V3=V3*(ICR+0.08)
170 IF V3>1 THEN 110
180 SOUND 0,0,0,0:RETURN
```

*** HOLD THE PRESSES !!! ***

Announcement by way of the President and the CHAOS BBS!
ATARI will be at CES (in a ballroom nearby)! It seems that Atari has rented a ballroom near the CES show to have a private showing of their new goods. This private showing is for the Business market not the Consumers. I hope they know what they're doing. We'll see. Heh, where's my invitation Jack?

CHAOS

ACE-80 Eighty Column Display
Review by Mike Aldrich
Copyright (C) 1985, Amiable Computer Enhancements
Written by Claus Buchholz

ACE-80 is a software-generated eighty column display device for Atari computers. It uses the Atari's own video hardware to display eighty remarkably legible characters across the screen. A monochrome monitor provides the clearest display, but ACE-80 is usable with color monitors and quality B&W and color TVs. ACE-80 provides an economical alternative to eighty column boards, which are available only for the Atari 800.

ACE-80 automatically installs itself in the Atari operating system in place of the E: and S: devices, the normal forty column screen editor and display. It uses about 12K of RAM when active but gives up that RAM when other screen modes are in use. The cartridge itself does not displace any RAM.

ACE-80 comes in two versions. ACE-80XL is a left cartridge that works in all Atari computers with at least 48K RAM. It can work with BASIC if BASIC is built into the machine (600XL and 800XL models). The right cartridge version, ACE-80, is only for the Atari 800. It allows BASIC to be available in the left slot.

When the computer powers up with ACE-80 installed, it immediately displays its title and waits for a key press. This gives you a chance to adjust the screen to your liking. The START and SELECT buttons, along with the SHIFT key, make the following adjustments:

START varies the brightness of the displayed characters.

SELECT varies the brightness of the background.

SHIFT-SELECT varies the background color. Use this to increase the readability on color displays.

SHIFT-START changes the cursor from flashing to steady or invisible.

When you've adjusted the display, press any key to boot the disk. The eighty column display remains active. It differs in minor ways from the normal screen editor. The maximum logical line length is eighty characters, so you cannot edit a BASIC program line of more than eighty characters. To do so, you must return to the forty-column mode.

Opening S: in mode sixteen reverts back to forty columns. In BASIC, GRAPHICS 16 does this. To return to eighty columns, either open E: or open S: in mode 0. That is GRAPHICS 0 in BASIC.

All graphics commands work as usual in eighty column mode except the DRAWTO and fill commands. All editing and cursor control keys also operate, except clear tab and set tab. Tabs are permanently set at every eighth position. SETCOLOR and most POKEs, such as cursor enable and left and right margins, work as well. All other graphics modes work normally.

Some programs designed to work under forty columns may not operate in eighty. There are several possible sources of incompatibility. Programs that do not use the operating system for screen I/O or that use custom displays will not work. Some programs may have conflicting memory demands. ACE-80 uses the top 12.5K of RAM as well as a few bytes at the bottom of page one.

Some incompatible programs can be altered to work with ACE-80. Useful programs such as word processors (currently Letter Perfect) really shine in eighty columns. Amiable will be providing fixes for several popular products. ACE-80 brings the Atari into a world of more powerful and professional applications.

I've been using one of the first prototype ACE80 cartridges now for a month or so and am thoroughly pleased with it. I have an \$85.00 General Electric TV/Monitor that really shows up a clear 80 column display. Even on my 10 year old RCA XL100 the 80 columns are decent. If you would like to be one of the first persons in your club (or on your block) to have a low priced, high quality 80 columns, contact TNT Computing, 6826 S. Washington Ave, Lansing, Michigan, 48910 or call 517-394-2412. At the present, the ACE80 will be selling for \$49.95. Discounts will be given for orders of 5 or more.

COMPUTER AMBUSH
from SSI Retail
Price: around \$30
Reviewer: Ralph Fellows

Summary

A complicated simulation of man-to-man combat between German and American soldiers during World War II. Very thorough job on details and execution. Mediocre use of Atari graphics, sound, and joystick. For one or two players.

Details

COMPUTER AMBUSH lets you maneuver individual soldiers around a map of a fictitious European town. You issue orders: move left, throw a grenade, load a machine gun, search a corpse, pick up a discarded weapon, wait for the enemy to appear, and so on. Your soldiers (and the

Continued on next page

CHAOS

Computer Ambush continued

enemy's) have different strengths and weaknesses: intelligence, physical strength, and so on. The outcome of the skirmish (usually only a few minutes long from the soldiers' viewpoints) depends both on your own abilities and on the abilities of your troops.

Although a skirmish only lasts a few minutes, playing it out takes a lot longer. You issue your orders through the keyboard exclusively, by typing things like MR09W (Move Regularly in direction 0 (north) for 9 squares Walking) and PF (Prepare Fragmentation grenade). Time is measured in hundredths of seconds, and every order takes a different amount of time to carry out -- assuming the soldier you issue it to doesn't forget it or get distracted.

In the two-player game, one human controls a squad of Americans and the other a squad of Germans. In the one-player game, the human plays the Americans against the computer-controlled Germans. 1P 5 0 The game comes with several scenarios, and allows you to vary the number of men in your squad and the way they're equipped. You can also set up any number of your own scenarios, and you can even design your own soldiers if you're not satisfied with the ones provided.

Opinions

The game designer put a lot of work into this game. Was it worth it? The answer depends on your enthusiasm for detailed combat simulations. My own enthusiasm for this kind of game has dwindled over the years. Yours may be higher.

At any rate, expect to spend several hours before you're comfortable with the mechanics. Even then, some of the scenarios can be extremely costly in casualties -- this is not a game where the good guys always win.

Judging from the copyright notices, this game was published for the Apple in 1982 and converted for the Atari in 1984. By now, I'd have expected more emphasis on the joystick, with menus -- something like Seven Cities, or even Dragonlord (see A.N.A.L.D.G. #29 review). And the display is the drabest, least colorful I've ever seen short of a text adventure.

Still, the game is an extremely detailed simulation of

man-to-man combat. The documentation is thorough and readable. If you're willing to put up with the clunky mechanics, COMPUTER AMBUSH may be just the game you're looking for.

KID'S EYE

(re)VIEW

A review of Spy vs Spy
by Colin Evans

I think that Spy Vs. Spy is a pretty neat game. You can play against the computer or a friend! As a two player it's really great! The object in the game is to make it out of an embassy building through an exit door with two planes on it, one white, and one black, with necessary money and loot stashed in a suitcase. If you don't have these items, a guard will punch you out.

There are icons on the side of the screen, which you can reach by standing in the middle of the room you are in and pressing the fire button twice (you cannot do this while fighting the other spy.) A lot of the icons are different kinds of traps: a gun that can be attached to a door, the water trap--so I call it--a bucket that can be hung over a door (if opened water will spill out over the person that opened the door, and if door is opened when a gun is attached, opener will get shot), a spring, which can be placed under an item in the room, and if lifted, the lifter will get hit in the stomach with the spring. Another trap is a bomb, which is like the above, except that it blows up. There's only one one more trap, the time bomb, which will go off in the room selected with the icons. The traps can be deflected, though, the bomb (not the time bomb) can be stopped by buckets found in red panels on the walls of some rooms, the water trap by the umbrella found on the hat stand--the gun trap by the by the clippers found in the medical cabinet found on some room walls--and the spring trap by the pliers found in the silver cabinet on some room walls.

Over all, Spy Vs. Spy is a pretty good game. The graphics and animation are excellent. The object is simple, but the game itself can get pretty complicated. The problem is that the game can get boring when you play against the computer, because the computer almost always wins. Still Spy Vs. Spy is good against a human opponent.

Spy vs. Spy is by First Star, \$34.95

CHAOS

A.N.A.L.O.G. #29

Reviewer: Ralph Fellows

Each issue of A.N.A.L.O.G. contains several programs. CHAOS has now subscribed to the disk service, so that the club doesn't have to type in all the programs by hand. Copies of these disks can be purchased from the club library.

This is a review of A.N.A.L.O.G. issue and disk #29.

ROBFIX.LST -- A patch to ROBOT RAID, a game from an earlier issue.

RAMDISK.BAS, RAMCASS.BAS, and RAMCHECK.M65 -- A thorough diagnostic for the RAM in your system.

RAMOS.BAS and RAMOS.M65 -- Loads an operating system into RAM.

MAXICOPY.BAS and MAXICOPY.M65 -- Speeds up copying of files from one disk to another and cuts down on disk swapping.

MULTIPLY.BAS and DOUBLER.BAS -- Allows multiplication of extremely long numbers (up to hundreds of digits).

DRAGON.BAS and DRAGON.ASM -- The only files that make any sense if you don't have a copy of the magazine. LOAD and RUN DRAGON.BAS, and you'll be playing a simple dungeon exploration game named DRAGONLORD, buying weapons, magic, food, and so on, fighting orcs, and eventually encountering the dragon.

This is an enjoyable-enough game, but it wasn't complicated enough to sustain my interest for more than a few hours. Even so, it's very well put together. Once you have typed your character's name, everything is joystick controlled via SEVEN-CITIES-type menus. If a game in Basic can be this well engineered, there's no excuse for the cumbersome mechanics that so many retail games use.

REVIVE.BAS and REVIVE.M65 -- Lets you revive files accidentally deleted from disk.

CHEEP1.BAS and CHEEP2.BAS -- Software that goes with a speech synthesizer that you can build.

BOOT1.BAS, BOOT2.ASM, BOOT5.BAS, BOOT6.ASM, and BOOT8.BAS -- Files mentioned in an article called "Boot Camp", an introduction to the Atari's capabilities.

BLINE.BAS and BLINE.M65 -- Adds a new command to Basic: AUTO, which puts the computer into auto-sequencing mode and saves you from having to type sequence numbers yourself.

HEXCHART.BAS -- Generates a chart of decimal numbers from zero to 255, showing hexadecimal and binary equivalents. Needs a printer.

*** CONTEST ***

Castle Communications will be running a software contest from now until June 13th, 1985. All submissions must be originally written by the submitter and not already exist in the CHAOS program library. Prizes will be awarded to the top five programs. Call Guy Hurt at 484-7675 or Castle Communications at 371-4321.

*** Helpful Hints 'FOREM' the BBS ***

(or the secret expert user mode)

Here is some useful information about some of the lesser known features of F.O.R.E.M. Some call these commands the expert user mode. I call them time savers.

'A' is the Ascii/Atascii toggle.

If you are using an Atari computer and are not running 'Downloader' or 'Teletalk', then you should be in Atascii translation mode to get the most out of this system. If for some reason, you are not in Atascii mode when you log on to the system you can switch to it by using option A. If at anytime you change translation modes without using option A, the system will no longer recognise any commands. The use of Atascii translation will allow you to send and receive inverse video characters (such as in prompts). This is a must when downloading ATASCII files.

'D' is the download command.

This is to be used when you already have the list of download files. This way, you do not have to wait for the file directory for each download.

'F' is the directory of download files.

The directory will tell you what type of program the file is, its length, language and translation mode. Any file can be downloaded in Atascii mode, however only Ascii files can be successfully downloaded in Ascii mode. If you are using X-modem protocol, the system will automatically switch to Atascii and then back to Ascii at the end of the download. Option F will initially prompt you for a subgroup of file categories. You can bypass this prompt by pre-selecting it at the command prompt.

For example to get a menu of games: #Select: F 6 or for all: #Select: F A.

Continued on next page

CHAOS

MULE Puzzle #2
by Ralph Fellows

Helpful Hints continued

What is Xmodem?

Xmodem is a handshaking technique used to obtain better accuracy in file transfers. Basically, it breaks the files into 128 byte sections, sending them one at a time, and asking the receiver if the section was received correctly. If it was not, the system will attempt to send the section (actually a sector of the disk) up to 9 times. If at the end of the 9th try there has been no success, the system aborts the transfer. Xmodem will also automatically save the file for you so you don't have to worry about extra prompt characters at the end of the file. This is very useful for non listed Basic programs. In order to use this, you must have some version of the program 'Xmodem' which is available for download on this system.

To Upload, use 'Send' and to download use 'Receive'.

'R' is the command to read or scan messages.

You can save time with this command and bypass additional prompts, but pre-selecting a range or sequence of messages to read. An example is probably the best way to precede.

- (1) #Select: R 100-1
- (2) #Select: R 10-20
- (3) #Select: R 1;3;9;5
- (1) will read all messages in reverse order from #100 to #1 inclusive.
- (2) will read all messages from #10 to #20.
- (3) will read message 1 then 3 then 9 and finally #5.

You can selectively read messages in any order forward or backwards. Hope this has been of some help.

Position at end of turn 3:

	1	2	3	4	5	6	7	8	9
A			3 Mtn		River			2 Mtn	
				Green	Green	Green			
				Crys 1	Farm 4	Engy 4			
B			1 Mtn		River			1 Mtn	
					Blue	Blue	Blue		
					Farm 4	Engy 4	Crys 4		
C			2 Mtn		Town	1 Mtn			
				Orange	Orange				
				Engy 4					
D			2 Mtn		River			1 Mtn	
			Red	Red	Red				
			3 Mtn 4	Engy 4	Farm 4				
E			2 Mtn		River			2 Mtn	
					Red	Orange	Orange		
						Farm 2			

Legend: Each plot has three lines. The top line describes the terrain in the square. The middle line shows who owns it. The bottom line describes the mule installed and the number of dots shown. Thus, plot B5 in the map above is a river plot, it's owned by the Blue player, it has a farming mule on it, and shows 4 dots. Plot E8 has 2 mountains on it, but no one owns it yet. Plot E5 is owned by Red but has no mule on it.

Situation: B7 was struck by a meteorite. There are 3 mules in the store, and they are selling for \$180. The store has well over 10 units each of food and energy. Everyone has a slight surplus of energy. Everyone but Orange has a surplus of food; Orange is one unit short. Pirates have not been here yet. The players and their cash:

- 1st -- Blue with \$551
- 2nd -- Red with \$104
- 3rd -- Orange with \$152
- 4th -- Green with \$257

In addition, Red has 9 units of smithore on hand.

Quiz Questions: Answers on next page
No Peeking Now!!

- (1) List the plots that could be the three-dot crystite plot indicated by Green's one-dotted at A4.
- (2) How does the game look from Blue's point of view? What should he do this turn?
- (3) How does the game look from Red's point of view? What should he do this turn?
- (4) How does the game look from Orange's point of view? What should he do this turn?
- (5) How does the game look from Green's point of view? What should he do this turn?

CHAOS

MULE PUZZLE #2 CONTINUED

Quiz Answers:

(1) A2, B3, C4, B5, and A6.

(2) Blue's lead is only momentary -- Red is going to make a killing on smithore this turn or next. Blue should shoot for the two-mountain plot at A8 and put a smithore mule on it. He should also re-outfit his crystite mule for smithore (temporarily).

(3) Red is in very good shape. For the moment, he should shoot for C2 or D1 and get another smithore mule out, even if it means re-outfitting his farming mule. He'll get to sell his smithore before he has to buy food. If by some chance Red gets good news, he should try to buy all the mules he can afford, to prevent Blue from getting one.

(4) Orange is in poor shape and heading downhill. He should probably concentrate on building up a (potential) crystite complex. He can go for one of two areas: B2-B3-B4-C2-C3, or D7-D8-D9-E8-E9. The upper left is probably richer, but the lower right is less likely to be contested.

In any case, he needs good news or a wampus to get back into the game. If he does get good news, he should probably forget about smithore, put out a crystite mine, and hope for the best.

(5) Green has some prospects. He should try for A3 and put a smithore mule on it for the moment, even if he gets good news. Crystite can wait.

Follow-Up Question:

(1) What should Green do if some other player manages to grab plot A3 during the land grant?

Follow-Up Answer:

(1) It's too late to think once this happens, so Green must have contingency plans ready. Before the land grant starts, he should decide what to do. Probably easiest is to go for plot A7. If A6 is the three-dot crystite plot, A7 will be a two-dotted; and all Green has to do is keep his button down when he misses A3. Then he should shuffle his mules so that A6 and A7 both have crystite mines on them. An equally good plan is to try for a crystite complex in plots A2-B2-B3-B4-C2-C3, shooting for B3 initially.

Note that Green should forget about smithore unless he's able to hit A3 -- the production from a single non-mountain plot won't be significant.

```
*****
** DYNAMITE ***** TNT **
** PRICES ***** **
** ***** COMPUTING *****
** Computer
** Hardware/Software
** & Supplies
**
** TNT COMPUTING
** 6826 S. Washington
** Lansing, Mich 48910
**
** Ask for Mike at
** 394-2412 Hours: 7-10pm
** weekends: 10-10pm
*****
```

TIPS for GHOSTBUSTERS

(how to get into Zuul very quickly)

by COLIN EVANS

If you want to get into Zuul fast, read on!

In order to get into Zuul, you have to get more money than you started with. The best strategy is to get as few things as possible, and then start capturing the Marshmallow. Start out by buying the compact. Then get 1 trap and some bait. (Only the above and nothing else.) When you get out on the streets, start busting like you normally would. (Don't forget you only have one trap.) When the P.K. energy gets to about 1000, or 1500, get near a building, and put your finger near the "B" key. When the ghosts are just about to form the Marshmallow Man, (when they're flying towards a building) hit the "B" key. (This will give you \$2000) Keep doing this until you get sucked into Zuul.

Ghostbusters is by Activision

More CHAOS BBS chatter 517-627-4243

Ever wonder what kind of programs are available on the BBS. Well, the following could have been downloaded at one time. They are probably in the Public Domain library now. Anyway heres a taste of what you can expect if you have a MODEM.

Filename	Sects.	Type
CHESS	040	game
STARS	007	demo
NEWATARI	028	feature text
PASSION	047	music
MELONS	005	demo
SNOWFLAK	010	demo
MATHFUNC	051	demo
ARTSTDOC	006	demo
ARTIST	069	demo
POLYCOPY	024	utility
DOSHELP	004	utility
UNDELETE	017	utility
AUTOSYS	009	utility
TOWER	003	utility
FORMTDSK	004	utility
DIRVSPED	012	utility
MENUMAKE	015	utility
PLOT3D	030	utility
SHUTTLE	004	utility
VBODRIVR	007	utility
VBODEMO	005	utility
ANUM	002	utility
COPYMATE	008	utility

CoCo NOTES

By Terry Feichtenbinder
CCUG President

The April meeting of the Greater Lansing Color Computer Users Group was jam-packed with people and demonstrations. We saw demos featuring two computers hardwired together for an aircraft dogfight simulation, a slow scan TV to computer conversion for weather pictures, an artificial intelligence demo and one of our members showed off a fantastic graphics editor that he has written. Who knows what we'll see next month? Join us and find out! Just a reminder, if you have any group meeting program ideas, suggest them to VP/Program Randy King or to me.

The next couple of CCUG meetings will be held at 1:00 PM in the East Lansing Public Library on May 4 and June 1. Plan to attend and bring your machine.

REVIEW OF:

DEFT PASCAL
DEFT PASCAL WORKBENCH

Deft Systems, Inc.

P.O. Box 359

Damascus, Maryland 20872

(Deft Pascal and Deft Pascal Workbench require a Radio Shack Color Computer with at least 32K of RAM and one disk drive. 64K Cocos can use the entire 64K of RAM.)

Deft Systems has brought out the first complete Pascal package for the Color Computer, and it's a winner. If you're interested in doing professional level programming on the Coco - or if you're just tired of trying to keep track of what's going on in that five-hundred-line BASIC monstrosity you're working on - you should definitely check it out.

Pascal has been the language of choice in most university computer science departments for at least the past decade, and it's the one chosen for the advanced placement college exams.

If you're not familiar with Pascal, it doesn't look much like BASIC (although the newer versions of BASIC - like Basic89 for OS9 on the Coco - are starting to look a lot like Pascal). Pascal uses no line numbers. A Pascal program can be broken up into manageable-sized chunks called procedures or functions, which are a more sophisticated version of subroutines. Procedures and functions are called by name, and parameters are explicitly passed into and out of them. Variables can be either global (valid anywhere within the program) or local (valid only within the block they're declared in). Control structures (IF .. THEN .. ELSE, FOR, WHILE, REPEAT .. UNTIL) all operate on blocks of statements.

Identifiers such as variable, procedure, and function names are unique for the first twelve characters. Compare all this to a typical jumbled BASIC program where you have to keep track of line numbers, skip around lines and lines of statements, use bizarre variable names because only the first two characters count, and worry that changing a variable somewhere might affect things that happen a long distance away, and you can see why it's a lot easier to design large programs in Pascal.

Pascal also lets you do a lot of things that you can't do in BASIC, like easily manipulate complicated data structures. It's a very powerful language, and if you take the trouble to learn it, you'll be amazed at what you can do with it. You may never write another long BASIC program again.

Pascal is a compiled language. You create a program using a text editor and then compile it into a final executable form. Deft Pascal compiles into native code (machine language), so a Pascal program executes a lot more quickly than a BASIC program which has to be interpreted one statement at a time. The drawback is that it takes more effort to debug a Pascal program - it has to be recompiled each time you make a change, which can be time-consuming.

For those of you who are familiar with Pascal, Deft Pascal is an almost complete implementation of Pascal (the only procedure from standard Pascal that I found missing is DISPOSE - Deft Pascal uses MARK and RELEASE for heap management, which is reasonable in a version designed to run in only 32 or 64K of memory). All standard Pascal data types are fully supported, as are RECORDs and SETs, so you can use the full power of Pascal's data structure handling capabilities. Deft Pascal's disk I/O is limited to sequential access files (as is also the case in standard Pascal), although a recently released supplementary package (Deft Extra) contains procedures for using random access files. You can also do I/O to tape, and send output to the printer.

Standard Pascal has some nagging deficiencies, but Deft Pascal has some extensions which make up for nearly all of them. Like most other versions of Pascal, Deft Pascal has a STRING type and provides some standard procedures for string manipulation. It also has type conversion functions, which relieves some of the pain that Pascal's strong typing can cause. You can also address memory locations directly, which is useful if you want to manipulate your Coco's hardware or graphics memory.

Deft Pascal programs can access all the RAM available in your Coco, and they don't use the ROM routines. If you have a 64K machine, you can use all 64K. The only restriction is that the machine

PASCAL Review cont.

language code in the final compiled program must fit into the lower 32K of RAM, since it has to be loaded by the BASIC ROM routines. The top 32K is still available for variable storage.

Compiling a Deft Pascal program is a two-step procedure. The compiler produces relocatable object files, which are converted to executable binary files by the linker supplied with the compiler. Deft Pascal allows separate compilation - packages of procedures can be created separately in modules, which can be compiled separately and linked together to produce a single binary file (which can be LOADMed and EXECed). This is enormously helpful in developing large programs. You can debug and test manageable-sized chunks of the program, and you don't have to recompile the whole thing every time you change one part of it.

The compiler is reasonably fast and produces reasonably efficient code. The Byte Magazine prime number sieve benchmark program compiles in under 15 seconds, links in under a minute (most of the time in both cases is taken up by disk I/O), and executes in 43 seconds. When you compare the execution time to 11 seconds for the same program compiled under Turbo Pascal on an HP 150 (Hewlett-Packard's IBM-compatible machine), it seems slow, but considering that the Coco's 6809 has a clock rate of under 1 MHz compared to the 150's 8086 running at over 4 MHz, 43 seconds is quite respectable.

Deft Pascal Workbench contains the compiler and linker from Deft Pascal, and adds a text editor, an assembler, a runtime symbolic debugger, and a library manager (which lets you define libraries of standard modules to be linked into your programs). The whole package is a very powerful development environment. The editor loads quickly and is very easy to use. You can edit a program, compile it, get back into the editor to examine the listing file for errors, re-edit the program, and recompile it very quickly, which takes some of the aggravation out of initial debugging. The assembler is a very good one, and produces relocatable object files just like the compiler's, which lets you write modules in assembly language and link them into Pascal programs. You can write procedures in assembly language which can be called from Pascal, and vice versa. I haven't had a chance to use the debugger yet, but it looks like an enormously powerful tool for tracking down runtime errors.

If you already own Deft Pascal, you can upgrade to Deft Pascal Workbench by purchasing Deft Bench - a step I'd definitely recommend.

I have very few gripes about this package. The documentation that I saw for Deft Pascal itself isn't as well organized as it could be, a lot of vital information is contained in the errata sheet, and there is no index. Fortunately, though, all of these deficiencies are corrected in the documentation for Deft Pascal Workbench (which, incidentally, comes in a very professional looking three-ring-binder format). My only complaint (well - suggestion) about the Pascal implementation is that it doesn't contain one enhancement that a lot of other versions have - a way to easily initialize arrays and data structures (somewhat like the DATA statement in BASIC). The Hewlett-Packard Standard Pascals that I use at work have this feature (called "structured constants"), and it would be a very useful addition to Deft Pascal (hint, hint).

I program in Pascal for a living (systems programming on Hewlett-Packard 1000 and 3000 series minicomputers - I must have written over fifteen thousand lines of Pascal in the past year), and I'm very impressed by the Deft system (in fact, I was loaned a copy of Deft Pascal to do this review, and was so impressed with it that I ordered my own copy of Deft Pascal Workbench two days later). The Pascal implementation is a very powerful one, and the Deft Pascal Workbench provides almost as comfortable a development environment as I'm used to at work. Pascal may not be for everyone - it takes quite a bit of effort to learn, and a lot of discipline to write programs in (especially if you're used to hacking around in BASIC), but if you're seriously interested in developing large, complex programs, it may be the only way to go. Considering that Deft recently dropped the prices on their products, the Deft system provides a lot of programming power at a very reasonable price.

(Deft has just released a package of useful routines for random access disk I/O, graphics, and more called Deft Extra. It also contains some useful technical information on the Pascal runtime package routines. I haven't seen it yet, but it looks very interesting....)

(One final note - Deft Pascal produces executable binary files that can be treated like any other machine language program. I called Deft Systems and asked if I could market the compiled versions of any programs that I developed, and they said that their only requirement would be that the program documentation contain a statement that the program was developed using the Deft Pascal Workbench - no licensing fees, no hassles. This is an enormously generous policy, and could make the Deft system a very worthwhile business investment!)

Mike Brandl


```

M   M   A   Y   Y
MM MM  A A  Y   Y
M M M  A   A  Y Y
M   M  AAAAA Y
M   M  A   A  Y
M   M  A   A  Y
M   M  A   A  Y

```

```

SSS   PPPP   EEEEE   CCC   III   A   L
S   S   P   P   E       C   C   I   A A   L
S       P   P   E       C       I   A   A   L
S       PPPP   EEE     C       I   AAAAA L
S       P       E       C       I   A   A   L
S   S   P       E       C   C   I   A   A   L
SSS   P       EEEEE   CCC   III   A   A   LLLL

```

+++++

WORD PROCESSING SPECIAL

MORROW MD2 MICROCOMPUTER WITH STAR PRINTER

\$1100.00

includes

WORDSTAR 3.0

STAR SG10 PRINTER with near letter quality type
(this is an example of the type quality)

+++++

DISKETTES

SINGLE SIDED * DOUBLE DENSITY

LOGIC * WABASH * CONTROL DATA * VERBATIM * XIDEX

any brand \$16.96 per box of 10
(while supplies last)

DOUBLE SIDED * DOUBLE DENSITY

XIDEX

\$19.16 per box of 10

Kruse Company
microcomputer division
826 West Saginaw Street

HEWLETT-PACKARD

New
From HP!

Serial ThinkJet

Use it with your:

Apple IIc

Apple Macintosh

IBM PCjr

IBM PC/XT

IBM PC/AT

DEMCO CONTROL SYSTEMS

4500 N. Grand River Ave.
(Near the Lansing Airport)
Stop out!
or call 321-1700



ENERGY
The Michigan Computer Consortium Magazine
Dennis C. Cullinan, Editor
Box 1302
East Lansing MI 48823
FORWARDING AND RETURN
POSTAGE GUARANTEED

BULK RATE
U.S. POSTAGE
PAID
EAST LANSING MI 48823
PERMIT 181